



Rapidox 1100Z Sampling Zirconia Oxygen Gas Analyser



Description

Cambridge Sensotec is launching its latest new analyser in 2009: the 1100Z which is our lowest-ever priced zirconia oxygen analyser.

The Rapidox 1100Z oxygen analyser allows fast and accurate oxygen analysis over the range 1ppm to 100% O₂. The analyser provides continuous on-line oxygen analysis, with a typical response time less than 5 seconds for a 90% response to a step change in gas compositions.

At the heart of the Rapidox 1100 is a zirconia oxygen sensor that needs to be heated to 650°C before it will conduct oxygen ions. The analyser supplies heat to the sensor, which is controlled very accurately by a regulated power supply incorporated in the instrument. An internal pressure sensor compensates for small changes in gas pressure to keep the readings stable.

The analyser contains a powerful diaphragm pump that constantly draws a gas sample at a flow rate of approximately 1 litre per minute. An on-board pressure sensor compensates for any pressure fluctuations in the sample gas. Alternatively the pump can be independently switched off and operated under flowing gas conditions.

The analyser includes fully programmable alarm circuits (alarm LOW and HIGH), programmable analogue outputs (0-10V and 4-20mA), easy calibration (user selectable gases), RS232/RS485 communications and a full set of communications / data-logging software.

Features

- Continuous gas sampling via powerful internally located pump (can be independently switched off and the unit operated without the pump)
- Very fast measurement response (around 5 seconds for a 90% response).
- Measurement range available 1ppm to 100% oxygen.
- Accuracy $\pm 1\%$ of the actual measured oxygen with a precision $\pm 0.5\%$.
- Easy to calibrate by the user using ANY TWO gases (air is normally one).
- THREE gas calibration available for enhanced accuracy.
- 0-10V and 4-20mA current loop outputs (both user programmable).
- RS232 / RS485 data-output
- Windows data logging software with MS-Excel compatible graphing.
- Programmable alarms (low and high condition) with outputs and visual warning.
- Unique sensor cleaning facility operated automatically.

Applications

- Laboratory scale furnace experiments where the control and monitoring of residual oxygen is critical.
- Sampling oxygen levels in rooms where asphyxiation may be a hazard. E.g. in rooms containing liquid nitrogen dewars
- Monitoring vehicle emissions and pollution control
- Industrial processes using low oxygen environments. E.g. wave soldering under nitrogen, vacuum welding, testing nitrogen generators
- Monitoring of the combustion process in lean-burn applications
- Control of critical oxygen atmospheres where high partial pressures are required.
- Food production
- Testing the purity of inert gases such as argon and nitrogen

Technical Data: Analyser

Voltage	110 / 220V ac 50/60 Hz
Analyser dimension	250mm X 263mm X 150mm
Weight	3.5 kg
Display	16 X 2 character (9mm) back lit
Warm up time	3-4 minutes at 20°C
Sample pump	Mains powered diaphragm pump
Normal operating temperature	5-35°C
Outputs	0-5V linear (user programmable)
	4-20mA linear (user programmable)
	RS232/RS485 : data every 0.1 second
Calibration	Requires 2 or 3 user-selectable gas compositions (air is default plus another)

Technical Data: Sensor & Pump

Maximum free air displacement	4 litres per minute (0.28 cfm)
Noise Level	40dB (max) at 1 meter
Maximum inlet temperature	55°C
Sensor Life expectancy	> 35000 hours
Range of measurement	1ppm to 100% O ₂
Response time (gas flow rate 1ltr.min ⁻¹)	approximately 5 secs for a 90% step
Accuracy	$\pm 1\%$ of the actual oxygen concentration
Precision of measurement	$\pm 0.5\%$ of the reading

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